

## SECTION I.—AEROLOGY.

SOLAR AND SKY RADIATION MEASURED AT  
WASHINGTON, D. C., DURING NOVEMBER, 1915.

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In Table 1 are summarized the measurements of the intensity of direct solar radiation made by the Weather Bureau at the American University,<sup>1</sup> Washington, D. C., during November, 1915. The means for the month are slightly lower than the five-year means published in the Bulletin of the Mount Weather Observatory, 1912, 5: 182, Table 3.

Skylight polarization, measured at solar distance 90° and in his vertical, with the sun at zenith distance 60°, averaged 62 per cent, with a maximum of 66 per cent. This latter is the same as the average maximum polarization for November published in the Bulletin of the Mount Weather Observatory, 1910, 3: 114, Table 16.

TABLE 1.—Solar radiation intensities at Washington, D. C., during November, 1915.

[Gram-calories per minute per square centimeter of normal surface.]

Date.		Sun's zenith distance.										
		0.0°	48.3°	60.0°	66.5°	70.7°	73.6°	75.7°	77.4°	78.7°	79.8°	80.7°
		Air mass.										
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
A. M.		Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.
Nov.	3				1.00	0.93	0.86	0.80	0.74	0.67	0.63	0.62
	5			1.02	0.92	0.80	0.73	0.65	0.59	0.54	0.51	0.47
	6			1.22	1.09	1.00	0.93	0.87	0.82	0.77	0.72	0.67
	9			0.94	0.83	0.77	0.71	0.66	0.61			
	10			1.24	1.26	1.19	1.13					
	16						1.12	1.04	0.96	0.91	0.86	0.81
	19			1.34								
	20			1.27	1.19	1.11						
	22			1.26	1.18	1.11			0.91	0.86	0.82	
	26			1.18	1.05							
	29			1.25	1.30							
Means				1.20	1.09	0.99	0.91	0.80	0.77	0.75	0.71	0.64
P. M.												
Nov.	1			1.03	0.87	0.75	0.66	0.59	0.51	0.45		
	6			1.19	1.08	0.99	0.92	0.84	0.78	0.71		
	9			1.24	1.11	1.01	0.90	0.77	0.64	0.53		
	10			1.34	1.26	1.19						
	16			1.32								
	20				1.25							
	22			1.28	1.18							
	26			1.18								
	27			1.25	1.23	1.14	1.05	0.98	0.91	0.85	0.81	0.79
	30			1.27	1.16							
Means				1.23	1.14	1.02	0.88	0.80	0.71	0.64	(0.81)	(0.79)

<sup>1</sup> For a description of exposures of instruments and details of observation see this REVIEW, December, 1914, 42: 648.

In Table 2, column 2 gives the daily totals of solar and sky radiation received on a horizontal surface at the American University during November, 1915. The measurements were made with a Calendar recording pyrliometer, as described in this REVIEW, March, 1915, 43: 100. Table 2, column 3 gives the daily departures from the normals published in the same number of the REVIEW, page 111, Table 4.

The "Percentage of possible sunshine" and the "Average cloudiness," given in columns 5 and 6, Table 2, have been taken from the records of the observatory of the central office of the Weather Bureau. The monthly mean percentage of possible sunshine is 71, as compared with a normal for November of 54 per cent.

TABLE 2.—Daily totals and departures of solar and sky radiation at Washington, D. C., during November, 1915.

[Gram-calories per square centimeter of horizontal surface.]

Day of month.	Daily totals.	Departure from normal.	Excess or deficiency since first of month.	Percentage of possible sunshine.	Average cloudiness.
	Gr.-cal.	Gr.-cal.	Gr.-cal.	Per cent.	0-10.
Nov. 1	295	46	46	93	4
2	28	22	68	93	3
3	240	2	70	96	3
4	103	-138	68	19	8
5	230	8	76	79	4
6	312	77	1	100	0
7	301	69	70	100	0
8	235	5	75	74	4
9	280	53	128	100	0
10	296	72	200	98	2
11	226	5	205	67	9
12	123	-96	109	21	6
13	268	52	161	94	5
14	49	-164	3	0	10
15	200	-10	13	61	6
16	261	53	40	93	4
17	267	61	101	100	0
18	246	43	144	79	4
19	192	-9	135	60	7
20	243	44	179	85	4
Decade departure			21		
21	121	-76	103	32	8
22	266	72	175	94	1
23	104	-87	88	0	10
24	219	30	118	79	4
25	201	14	132	67	5
26	221	36	168	77	4
27	181	-3	165	61	4
28	213	31	196	78	4
29	161	-20	176	22	7
30	226	47	223	94	3
Decade departure			44		
Total excess or deficiency since first of year			-1,481		

The above data indicate more than the usual number of hours of sunshine during November, but radiation intensities slightly below the average for the month. There was a slight deficiency of radiation during the second decade, but an excess during the other two, the excess being pronounced during the first decade.